

Hart Mountain National Antelope Refuge
Lake County, Oregon

Pronghorn Update #3

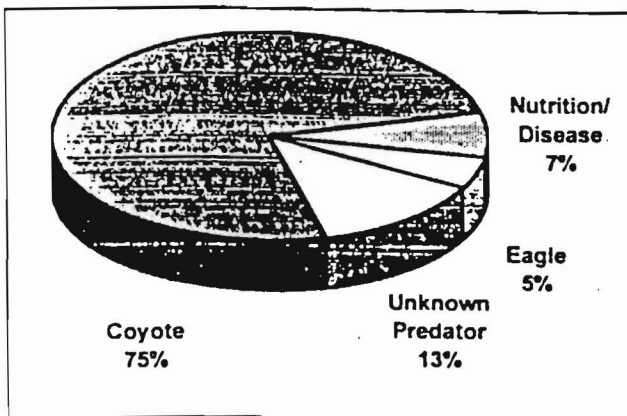
October 1997

Two-Years of Pronghorn Research Reveals Healthy Herd

The U.S. Fish and Wildlife Service and Oregon Department of Fish and Wildlife cooperated in two major pronghorn research projects in 1996 and 1997. The studies focused on fawn survival, fawn and doe health, nutrition, and habitat conditions.

Both pronghorn fawns and does were shown to be in excellent health, and habitat conditions on Hart Mountain National Antelope Refuge are better now than at any time in the recent past. Yet, fawn recruitment into the population is below the long-term average, causing a gradual decline in herd size and foreshadowing a bigger drop as today's reproducing does die.

Coyotes Are Leading Cause of Fawn Mortality

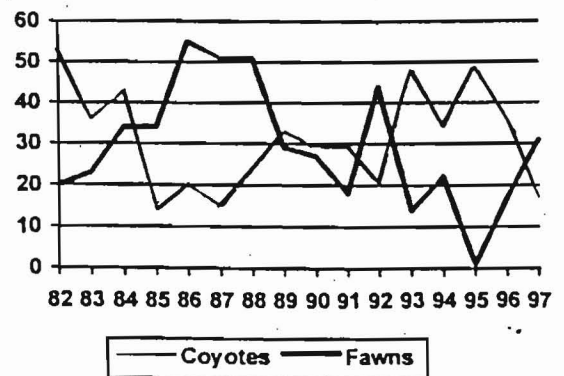


A two year fawn study was conducted on Hart Mountain. A total of 104 fawns were assessed for health, radio tagged, and monitored to determine survival rates and causes of death. Weather, habitat, and predator surveys were also performed to look for relationships with fawn mortality.

Of the 104 fawns studied, 17 fawns (16%) survived until mid-summer. Fawns born in the middle or late portions of the fawning season were more likely to survive than those born early. The majority of fawn mortalities occurred within the first week of a fawn's life. Fawns which lived to be three weeks old, had a 90% chance of surviving the summer. The remains of most dead fawns were recovered, and from these remains and information gathered during monitoring, probable cause of death

was identified for 82% of the fawns that died. Predation accounted for 93% of all mortalities. The actual type of predator could not be determined with certainty for 13% of the fawn mortalities. Some or many of these deaths were likely due to coyotes, so the fawn mortality that can be attributed to coyotes is 75% at a minimum and quite possible more.

Coyotes were the leading cause of fawn mortality. No underlying physical or nutritional factors could be found that would have contributed to high levels of predation. A strong inverse relationship through the 1980s and 90s has been found between regional coyote numbers (an index based on sightings during surveys) and annual fawn survival. When the coyote index is high, fawn numbers are low and vice versa.



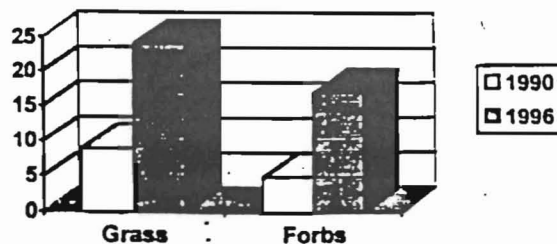
Pronghorn Habitat, Health & Nutrition Are Excellent

Nutrition was not identified as a major cause of death in fawns, but extensive nutritional analysis was done to identify possible underlying conditions which may have made pronghorn fawns unhealthy or susceptible to predation. No nutritional deficiencies, diseases, or parasites were found that predisposed fawns to predation.

The blood analyses and physical condition assessments done on pronghorn fawns and does showed animals in very good to excellent health. Doe fat reserves were high, their reproductive status was excellent, their longevity was above expectations, and they were free of disease and nutritional problems. Fawns had above average birth weights, nursed well, and appeared to be vigorous.

There was no indication from the physical condition of the animals or from the vegetation sampling performed that any habitat-related problems exist. The habitat factor believed to be most closely connected with pronghorn productivity and fawn survival is the availability of forage, especially forbs. Since 1990, forb cover in key pronghorn habitat on Hart Mountain has increased three-fold due to the removal of livestock and an abundance of precipitation. Habitat conditions on the refuge for pronghorn are better now than they have been at any time in the recent past.

Percent of Ground Covered



Low Fawn Survival Means Smaller Herd in Future

Summer fawn survival for 1997 was 31 fawns per 100 does. This fawn-to-doe ratio is an improvement over the very low levels of the recent past, but it is still below the long-term average. Low fawn survival since 1991 has left few young animals in the herd. The vast majority of reproducing does is believed to be 7 years of age or older. Studies suggest that pronghorn longevity is normally up to 9 years of age, but Hart Mountain does are living and reproducing well past this age. The advanced ages of Hart Mountain pronghorn are an indication of the good health of the herd, but may result in above average adult mortality in coming winters and, consequently, the loss of a large percentage of the herd's reproducing does.

PRONGHORN QUESTIONS & ANSWERS

What is the rate of survival of pronghorn fawns?	In 1996, 17 fawns per 100 does survived until mid-summer. In 1997, that figure was up to 31 fawns per 100 does. Over the last 5 years, fawn survival has averaged 17 fawns per 100 does. The long-term average on Hart Mountain is 39 fawns per 100 does. It is believed that an average of 25-30 is needed to maintain the size of the herd.
What are the major causes of death in Hart Mountain fawns?	Predation, primarily due to coyotes, caused the overwhelming majority of mortality (93%) in the last two years. Disease and poor nutrition accounted for very few deaths (7%). No other factors were connected with any deaths.
Are pronghorn fawns in good health at birth and in their first weeks of life?	Indicators studied showed fawns in very good health. Physical examination of fawns by veterinarians and blood analyses revealed very high levels of fitness.
What is the reproductive health of pronghorn does?	All 40 does studied were pregnant, and the observed fetal rate of 1.9 is high. The reproductive functions of the herd appears to be very strong.
What is the condition of pronghorn habitat on the refuge?	Vegetation sampling and health indicators in pronghorn fawns and does show good habitat quality. There were no indications of any habitat problems.
Does summer fawn survival have a relationship to the size and health of the herd?	Currently summer fawn survival appears to be the key factor regulating the size of the pronghorn herd. Winter severity and carrying capacity of the habitat were not found to be limiting factors in this study.
What are the population numbers and age structure of this herd?	The Hart Mt/Beaty Butte herd currently numbers 5200. This number is down nearly 30% since 1990 when the population was 7200. In 1996/97, herd numbers remained fairly stable due to mild winter conditions and low adult mortality. The population is currently weighted with older animals and at risk for high levels of adult mortality in coming winters.

What Happens Now?

Data from the fawn and doe studies have answered major questions posed by managers and the public regarding herd health and fawn mortality. The U.S. Fish and Wildlife Service and Oregon Department of Fish and Wildlife now have current and detailed scientific information to supplement more than 40 years of data on this herd. Managers must use this data to determine what, if any, actions are necessary to maintain the health of the pronghorn herd.

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